

Healthy Adolescents - Overview

Key points

- *Healthy adolescents = healthier adults.*
- *Adolescent health and success in school are closely related.*
- *Adolescent health problems result in great personal, social and monetary costs.*

Why is adolescent health important?

Adolescence — the transition from childhood to adulthood—is one of the most dynamic stages of human development. It is a time of marked physical, emotional, and intellectual changes, as well as changes in social roles, relationships and expectations.

Adolescents are not just teenagers. The age range of adolescence includes 11-21 year-olds and includes three developmental stages: early adolescence (11-14 years of age), middle adolescence (15-17 years of age), and late adolescence (18-21 years of age). These developmental stages are important to consider when planning interventions and programs to meet health-related needs of adolescents.

- Adolescent health provides the foundation for adult health status. Life-long patterns of healthy behaviors are established at this time.
- Unhealthy adolescent behaviors can become long-term risk factors for chronic health conditions in adulthood.

Youth who have problems with schoolwork are more likely than others to be involved in multiple health and safety risks. Health and education are closely related; school failure needs to be viewed as a health and educational crisis.

When students are healthy, they are better learners and more likely to succeed in school.

Why is adolescent health a critical issue for Missouri?

Adolescent health problems result in great personal, social, and monetary costs.

- **Motor vehicle crashes are the leading cause of injury and death for adolescents.**
 - ✓ Missouri adolescent deaths on roadways exceeded the national rate in the years 1995-1999.
- **Preventing adolescents from smoking saves lives and taxpayer dollars.**
 - ✓ If the current smoking rate continues, 139,484 of today's Missouri youth will die from tobacco-related illnesses.
 - ✓ Missouri's share of smoking-related Medicaid expenditures rose from \$80.7 million in 1993 to \$182.1 million in 2001.
 - ✓ The overall cost of tobacco use to Missourians is \$1.7 billion annually for direct health care and \$2.2 billion in lost productivity.
- **The prevalence of overweight children and adolescents has more than tripled in the past two decades.**
 - ✓ During that time, annual hospital costs for obesity-related conditions in youths aged 6-17 increased by \$92 million (in 2001 dollars).
 - ✓ A 1999-2000 assessment of 20,000 Missouri 5th and 9th graders found that nearly 40% were already overweight or at risk for being overweight.
- **Teen pregnancy has serious consequences for teen parents, their children and society.**
 - ✓ Teen childbearing costs taxpayers at least \$7 billion each year in direct costs associated with health care, foster care, criminal justice, and public assistance, as well as lost tax revenues.

There is no single solution to address the complexity of adolescent health needs and issues. The most promising strategies include prevention, intervention and health promotion efforts at places where young people's behavior can be influenced. Family and home, social relationships and school, neighborhood and community, all influence the health and well-being of youth.

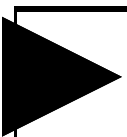
Adolescents benefit from supportive environments and are less likely to engage in risk behaviors if they:

- ✓ have a sense of physical, emotional, and economic security
- ✓ have connections with caring adults and peers
- ✓ are able to make a contribution to the community and have input into decision-making
- ✓ believe that others have high expectations of them
- ✓ participate in engaging and challenging activities that build skills and competencies

Four Targeted Action Areas

The Missouri Department of Health and Senior Services, in collaboration with other state agencies and community partners across the state, will focus on four targeted action areas to improve the health of Missouri's adolescents. The four areas include:

- 1) Motor vehicle safety
- 2) Tobacco use prevention
- 3) Healthy weight
- 4) Teen pregnancy prevention

 SUCCESS INDICATORS	Healthy People 2010	2000 Baseline	2001 Actual	2002 Actual	2003 Target	2004 Target	2005 Target
Rate of deaths to adolescents aged 15-24 caused by motor vehicle crashes per 100,000	N/A	41.4	35.9	41.0	37.1	36.8	36.5
Rate of injury to adolescents aged 15-24 caused by motor vehicle-traffic per 100,000	N/A	3182.6	3256.6	Avail Dec 04	3069.4	3042.6	3015.7
Percent of students grades 9-12 who smoked cigarettes on one or more of the past 30 days	16.0%	32.8%	30.3%	Avail Jan 04	30.3%	30.3%	30.3%
Percent of adolescents ages 9-11 who are at a healthy weight	N/A	58.1%	*57%	57.6%	59.0%	60%	60%
Percent of adolescents ages 12-17 who are at a healthy weight	N/A	58.7%	*52.1%	61%	60%	60%	60%
Rate of pregnancy among adolescents aged 15-17 per 1,000	46.0	32.5	29.2	27.7	26.3	24.3	22.4

* Data is from 2000—2001 school year.

Interventions that work:

Coordinated School Health Program Middle Schools/High Schools

Coordinated school health programs have been shown to effectively reduce the prevalence of health risk behaviors among young people.

The coordinated school health approach has proven especially effective in:

- promoting the prevention of health behaviors for chronic diseases including physical activity, healthy eating, and tobacco use prevention;
- prevention of intentional injuries, abuse of alcohol and other drugs, and prevention of pregnancy, HIV and other sexually transmitted diseases;
- improving students' access to needed health and mental health services.

A coordinated school health program addresses numerous adolescent health and developmental issues through a wide array of services. The eight components of the Centers for Disease Control and Prevention's (CDC) coordinated school health program includes:

1. Healthy School Environment
2. Health Education
3. Physical Education
4. Nutrition Services
5. Health Services
6. Counseling, Psychological, and Social Services
7. Health Promotion for Staff
8. Family/Community Involvement

Resources available to support coordinated school health programs:

School Health Index

The School Health Index is a self-assessment and planning guide developed by CDC to assist schools in assessing all eight of the components of the coordinated school health model. It is a self-assessment tool that a school can use to determine its own priorities for making improvements. Currently, the School Health Index addresses physical activity, healthy eating, and tobacco-free lifestyle. Future versions will address all six behaviors that account for the most serious illnesses and premature deaths, and will additionally include injury prevention, alcohol and other drugs, and sexual behavior. By using the School Health Index, schools voluntarily:

- Identify strengths and weaknesses of school health promotion policies and programs.
- Develop an action plan for improving the identified weaknesses and thus improving student health.
- Involve teachers, parents, students, and the community in improving school health services and programs.

DHSS Strategies for Supporting the Intervention

1. Provide technical assistance and funding to support components of the coordinated school health program.
2. Recommend and support implementation and evaluation of the CDC School Health Index statewide.

Success Indicators:

- Rate of motor vehicle related deaths
- Rate of motor vehicle related injuries

What are the trends?

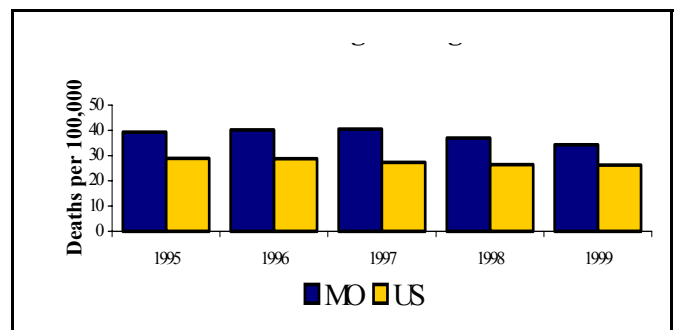
Adolescent deaths that are a result of motor vehicle crashes have declined slightly during the period between 1995 and 1999. The rate of death decreased from 39.3 per 100,000 adolescents in 1995 to 34.3 in 1999.

- Adolescents die on roadways in greater proportion than other drivers.
- Motor vehicle crashes are the leading cause of death for adolescents and young adults 15 to 24 years of age.
- 13.6% of adolescent drivers ages 16 through 20 involved in a crash were not wearing a seat belt compared to 9.3% for drivers of all ages involved in a crash.

How does Missouri compare to others?

Missouri's rate for motor vehicle traffic related deaths exceeded the national rate each year of the same period. This is in spite of advances in roads and safety devices.

**Motor Vehicle Traffic Related Deaths
Adolescents and Young Adults Ages 15-24**



Source: *Vital Statistics*, Center for Health Information Management and Evaluation.

Interventions that work:

Interventions Designed to Increase the Use of Seat Belts

Much evidence exists to show the use of motor vehicle occupant seat belts decreases injuries and deaths in motor vehicle crashes. Enhanced enforcement programs, including increased citations for non-compliance with seat belt laws, and media campaigns have been shown to increase safety belt use by 17% and reduce fatal injuries by 7% to 15%.

Primary enforcement of safety belt laws for all occupants of motor vehicles allows law enforcement officers to stop and ticket drivers for not wearing seat belts. Seat belt usage can be the primary reason to stop drivers. A combination of primary enforcement, media campaigns, and public education has been proven to be effective in increasing seat belt use and reducing deaths. States with primary seat belt laws have usage rates of 10 to 15 percentage points higher than states with secondary seat belt laws.

The habit of using seatbelts begins before children reach adolescence. Model child passenger safety programs include:

- National Highway Traffic Safety Administration (NHTSA) Standardized Child Passenger Safety Training Program. The NHTSA program is the first national training program to address the needs of child passenger safety (CPS) professionals. The program was developed to provide quality control in course content and instructors to ensure that information and materials used are up-to-date, accurate, and consistent. The program ensures that CPS professionals, who are responsible for educating their communities on child passenger safety, have the most up-to-date

training and information available. Certification is available through the American Automobile Association .

- “Mobilizing America to Buckle Up Children” is a basic training in child passenger safety enforcement for patrol officers. The program focuses on boosting overall enforcement of and compliance with child occupant protection laws, and increasing safety belt use among adults through routine traffic stops. Materials designed for Mobilizing America support many forms of training, from 10-15 minute self-instructional segments to a four hour instructor-led seminar.

DHSS Strategies for Supporting the Interventions

1. Strengthen enforcement of current seat belt law.
2. Encourage local and state policies/laws regarding seat belt usage.
3. Coordinate funding and programmatic efforts to promote seat belt usage.
4. Develop “toolkit” that includes core elements of a comprehensive approach for communities, including resources and funding opportunities.
5. Provide information, technical assistance and training to local communities to improve seat belt usage.

Success Indicators:

- Percent of Missouri students grades 9-12 who smoked a whole cigarette for the first time before age 13
- Percent of Missouri students grades 9-12 who smoked cigarettes on one or more of the past 30 days

What are the trends?

Smoking among students grades 9-12 declined over the five year period 1995 –1999. The 2001 Missouri Youth Risk Behavior Survey shows an increase in smoking since 1999. Missouri's percent of high school students who smoke exceeded the national rate for the period from 1995 to 2001.

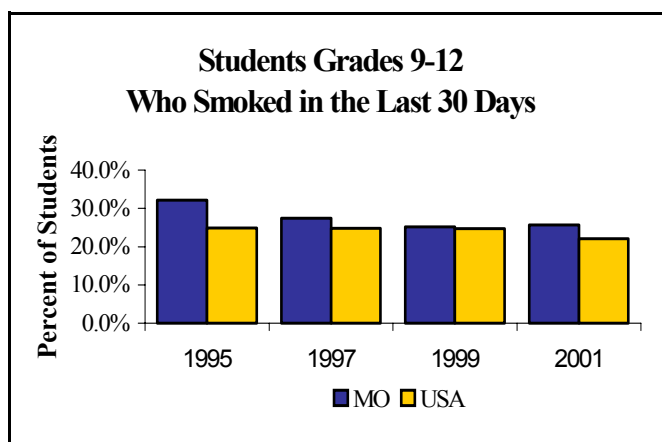
The percent of students who began smoking before age 13 followed a similar trend to the percent of students smoking. The percent of students who began smoking before age 13 also exceeded the national rate for the period from 1995-2001.

Preventing adolescents from smoking will save lives. Each year 10,300 Missourians die from tobacco-related illnesses. At the current rate of smoking among adolescents, 139,484 of today's youth in Missouri will die prematurely due to tobacco-related illnesses.

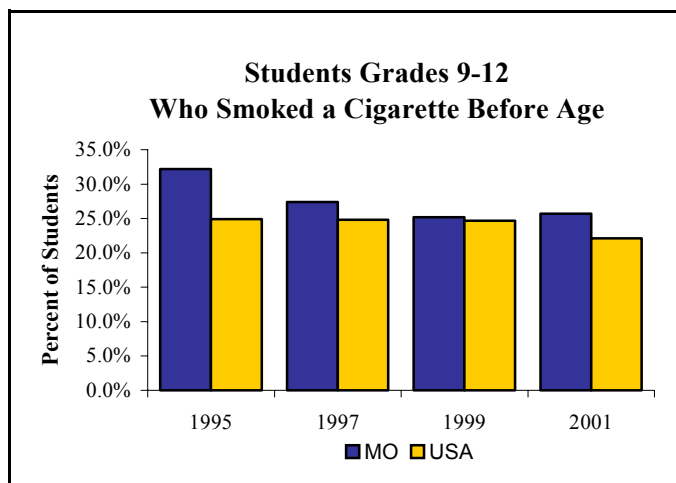
Tobacco use results in tremendous economic costs to Missouri. The state's share of Medicaid expenditures rose from \$80.7 million in 1993 to \$182.1 million in 2002 as a result of smoking.

The overall cost of tobacco use in Missouri is \$1.7 billion annually for direct health care and \$2.2 billion in lost productivity.

How does Missouri compare to others?



Source: Youth Risk Behavior Survey—Missouri & United States



Source: Youth Risk Behavior Survey—Missouri & United States

Interventions that work:

Comprehensive Tobacco Use Prevention Program

The Task Force on Community Preventive Services completed a thorough review of published tobacco control research and made recommendations for interventions that effectively reduced tobacco use and exposure to secondhand smoke.

Effective Interventions that form a comprehensive tobacco use prevention and cessation program include:

- Evidence-based community and school-based programs that encompass tobacco use prevention education and policy adoption to create tobacco-free environments.
- Affordable, accessible and effective cessation services.
- Media and counter-marketing to support local programs and promote cessation services.
- Statewide programs to support local efforts to reduce tobacco use and exposure to secondhand smoke.
- Increasing the price of tobacco products such as by increasing state excise taxes.
- Chronic disease programs for screening and early detection of tobacco-related diseases.
- Enforcement of state and local tobacco control laws and policies.
- Surveillance and evaluation systems to track tobacco use and progress in meeting program objectives.

These interventions as part of a **comprehensive tobacco use prevention and cessation program** can have significant impact on tobacco use. The combination of these efforts through a comprehensive tobacco use prevention program implemented in California during the early 1990's resulted in a 57 percent reduction in to-

bacco use while there was only a 27 percent reduction in the United States during the decade. There were also 33,000 fewer deaths due to heart disease in the state during this period.

How do we rate in Missouri in implementing these proven interventions?

- Missouri's tax on tobacco products is among the lowest in the country. At seventeen cents on each pack of cigarettes, it ranks sixth lowest among all states.
- Missouri's State Clean Indoor Air Law offers limited protection for nonsmokers because it allows designated smoking areas in workplaces and public places.
- Communities and workplaces in Missouri are working to provide increased protection for workers and the public by adopting policies and ordinances further restricting smoking indoors.
- Missouri ranks at the bottom of all states in state funding to support a comprehensive tobacco use prevention and cessation program.
- Through a strategic planning process with state and local tobacco use prevention partners, coordinated efforts to maximize use of the existing, limited resources have been undertaken.

DHSS Strategies for Supporting the Interventions

1. Provide information and technical support to communities and schools implementing tobacco prevention education and policy interventions.
2. Involve youth in programs to increase pro-health knowledge, beliefs and skills among young people to counter influences to use tobacco.
3. Secure funding for an evidence-based comprehensive tobacco use prevention and cessation program.
4. Support efforts to increase the state excise tax on tobacco products.

Success Indicators:

- Percent of school-age adolescents who are healthy weight
- Percent of adolescents who eat 5 or more servings of fruits and vegetables per day
- Percent of students who exercised or participated in physical activities for at least 20 minutes that made them sweat and breathe hard on three or more of the past seven days

What are the trends?

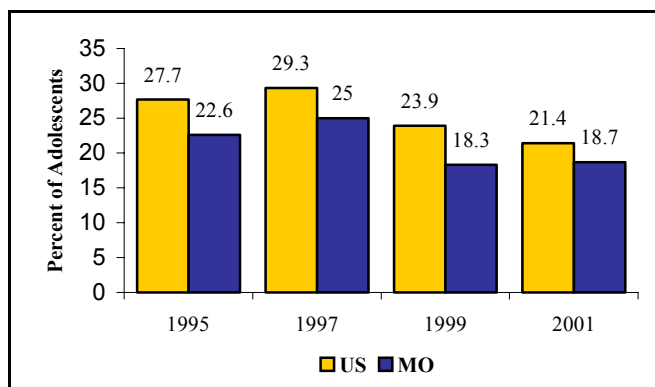
The prevalence of overweight children and adolescents has doubled since 1979. A 1999-2000 assessment of 20,000 Missouri fifth and ninth graders found that nearly 40% were already overweight or at risk for being overweight. Eighty percent of adolescents who are overweight go on to become obese adults.

Weight, exercise, and eating habits are not only related to physical health, but emotional and mental health as well. "Weight" is a very sensitive issue for some adolescents and their parents. Eating disorders (including anorexia, unhealthy weight loss and bulimia) are serious conditions that are being diagnosed in younger adolescents prior to high school. Eating disorders lead to medical and psychological problems that impair normal growth and development of teens. Another concern is the increased amount of "screen time" adolescents are spending watching television or surfing the internet instead of engaging in physical activity.

Maintaining healthy weight is best accomplished through healthy eating behaviors and regular physical activity. Physical activity and nutrition can affect adolescents' energy levels and influence growth and body composition. Physical activity can reduce anxiety and stress and increase self-esteem. Nutritious eating habits can positively impact problem-solving skills and academic achievement.

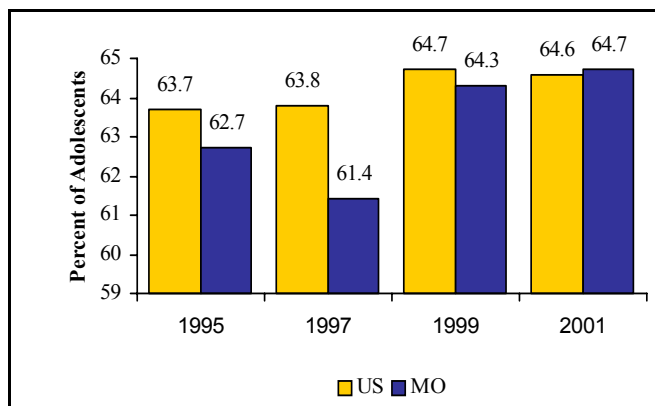
How does Missouri compare to others?

Adolescents Grades 9-12 Who Ate 5 or More Servings per Day of Fruits and Vegetables



Source: Youth Risk Behavior Survey—Missouri & United States

Adolescents Grades 9-12 Who Participated in Vigorous Activities



Source: Youth Risk Behavior Survey—Missouri & United States

Interventions that work:

Community Initiatives that Promote and Support Physical Activity and Nutrition Environments

The research strongly recommends social support interventions in community settings and the creation of (or enhanced access to) places for physical activity combined with informational outreach activities. Effective behavioral change interventions focus on activity behavior through building and maintaining supportive social networks. Access to places for physical activity can be created or enhanced by building or enhancing existing trails, sidewalks, or facilities.

One model initiative is Hearts N' Parks, a national, community-based program supported by a partnership between the National Heart, Lung, and Blood Institute (NHLBI) and the National Recreation and Park Association (NRPA). This innovative program aims to reduce the growing trend of obesity and risk of coronary heart disease by encouraging Americans of all ages to aim for healthy weight, follow a heart-healthy eating plan, and engage in regular physical activity. Hearts N' Parks activities can be incorporated into a variety of programs through recreation and park departments and other community organizations. Staff training and resources are provided to integrate heart-healthy activities into existing or new programs. Evaluation materials to measure the program's impact are also included. Missouri was designated by NHLBI and NRPA as one of ten states to serve as Magnet Centers for the expanded implementation of the Hearts N' Parks Program. Six parks and recreation departments in Missouri have agreed to participate; they include Des Peres, Jefferson City, Kansas City, Poplar Bluff, Rolla, and Springfield.

"Changing the Scene" Tool Kit

The United States Department of Agriculture (USDA) has developed a "Changing the Scene" tool kit to help communities improve the nutritional environment of schools. This tool was developed in collaboration with more than 20 national organizations, including the American Academy of Pediatrics, The American Dietetic Association, the United States Department of Education, and the CDC.

"Changing the Scene" includes definitions of success for six components:

- Commitment to Nutrition and Physical Activity
- Quality School Meals
- Other Healthy Options
- Pleasant Eating Experiences
- Nutrition Education
- Marketing

DHSS Strategy for Supporting the Intervention

1. Support expanded implementation of community initiatives and programs that promote physical activity and healthy eating.

Success Indicator:

- Rate of pregnancy among adolescents aged 15-17 per 1,000 population

What are the trends?

Missouri's pregnancy rate for adolescents ages 15-17 has steadily declined since 1995. The rate for 2000, 32.5, represents approximately a 25% decline from the 1995 rate of 42.0—but still more than 4,000 Missouri teenagers become pregnant each year.

Youth at greatest risk are more likely to live in areas with high poverty, low levels of education, high residential turnover, and high divorce rates. Other risk factors include school failure, drug and alcohol use, early sexual activity, low parental expectations for academics, and low connectedness with parents, other adults and school. Teen girls whose first partners are older teens or adult men are at increased risk for becoming pregnant.

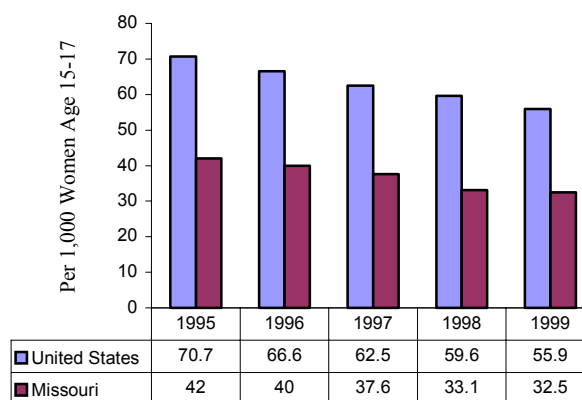
Not only does teen childbearing have serious consequences for teen parents, their children, and society, it also has important economic consequences.

- A cost-benefit analysis suggests that the government could spend up to eight times more than is currently being spent on teen pregnancy prevention and still break even.
- A study estimating the cost-effectiveness and cost-benefit of one particular curriculum found that for every dollar invested in the program, \$2.65 in total medical and social costs were saved. The savings were produced by preventing pregnancy and sexually transmitted diseases (STDs).

How does Missouri compare to others?

While the teen pregnancy rates are at their lowest level in 20 years, the United States still has the highest rates of teen pregnancy among other countries in the industrialized world.

Pregnancy Rate for Adolescents Age 15-17 United States and Missouri



Source: *Vital Statistics*, Center for Health Information Management and Evaluation.

Interventions that work:

Programs That Promote Healthy Youth Development and Reduce Teen Pregnancy

Research strongly suggests that youth development programs that include service learning, promote healthy behavior, life skills development, and a sense of purpose can reduce teen pregnancy.

“Although the research does not clearly indicate why service learning is so successful, several possibilities seem plausible: participants develop relationships with program facilitators, they gain a sense of autonomy and feel more competent in their relationships with peers and adults, and they feel empowered by the knowledge that they can make a difference in the lives of others. All such factors, in turn, may help increase teenagers’ motivation to avoid pregnancy. In addition, participating in supervised activities—especially after school—may simply reduce the opportunities teens have to engage in risky behavior, including unprotected sex.”

One of more promising programs is the *Teen Outreach Program*.

The *Teen Outreach Program (TOP)* is a model youth development approach proven effective in increasing academic success, and preventing teen pregnancy and negative behavior among program participants. In an experimental evaluation of the program, high school students from 25 sites nationwide were randomly assigned to a *TOP* group or a control group. The program produced these outcomes:

- 11% lower rate of course failure;
- 14% lower rate of suspension;
- 33% lower rate of pregnancy; and
- 60% lower school dropout rate.

Results suggested the potential value of the *TOP* specifically, and also more generally of interventions that seek to prevent problem behaviors by addressing

broad developmental tasks of adolescence rather than by focusing upon the individual problem behaviors. *TOP* is a nationally replicated program that gives communities a framework for cultivating a variety of strategies for local implementation. The *TOP* can be successfully implemented by schools, as well as by community and faith-based organizations that serve youth. The program is ideally suited to reach young people between the ages of 12-17.

The program has two main features: 1) curriculum-guided group discussions and 2) opportunities for young people to provide volunteer services designed to improve their communities. *TOP* sessions include a wide range of topics of interest to adolescents including friendships, relationships, sexuality education, and other issues. Each program is independently operated and focuses on the specific problems facing the particular community in which it is implemented.

Currently there are several *Teen Outreach Programs* successfully being implemented in Missouri.

DHSS Strategies for Supporting the Interventions

1. Establish and lead an interagency task force to identify and coordinate resources across agencies and organizations that promote healthy adolescent development and reduce teen pregnancy.
2. Provide information and technical assistance to enable counties and communities with higher than state teen pregnancy rates to implement youth development programs shown to reduce teen pregnancy.
3. Develop a plan to compare and evaluate promising programs designed to reduce teen pregnancy.